

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for producing an acrylamide polymer, wherein the acrylamide polymer is white in the form of a powder and is colorless in the form of an aqueous solution, comprising:

enzymatically hydrating acrylonitrile containing oxazole at a concentration of 5 mg/kg or less and hydrogen cyanide at a concentration of 1 mg/kg or less to yield acrylamide; and

polymerizing monomers containing the acrylamide wherein the temperature for polymerization ranges from 10 to 90°C.

2. (Previously Presented) The method for producing an acrylamide polymer according to claim 1, wherein, during said hydrating, the reaction is carried out until the concentration of acrylamide generated in a reaction solution becomes 30% by mass or more.

3. (Previously Presented) The method for producing an acrylamide polymer according to claim 1, wherein the enzymatic method is carried out using microbial cells as catalysts.

4. (Previously Presented) An acrylamide polymer obtained by the method according to claim 1.

5. (Previously Presented) The method for producing an acrylamide polymer according to claim 2, wherein the enzymatic method is carried out using microbial cells as catalysts.

6. (Currently Amended) A method for producing an acrylamide polymer, wherein the acrylamide polymer is white in the form of a powder and is colorless in the form of an aqueous solution, comprising:

measuring the content of oxazole and hydrogen cyanide in an acrylonitrile sample;  
enzymatically hydrating acrylonitrile containing oxazole at a concentration of 5 mg/kg or less and hydrogen cyanide at a concentration of 1 mg/kg or less identified by said measuring to yield acrylamide; and

polymerizing monomers containing the acrylamide wherein the temperature for polymerization ranges from 10 to 90°C.

7. (Previously Presented) The method for producing an acrylamide polymer according to claim 6, wherein, during said hydrating, the reaction is carried out until the concentration of acrylamide generated in a reaction solution becomes 30% by mass or more.

8. (Previously Presented) The method for producing an acrylamide polymer according to claim 7, wherein the enzymatic method is carried out using microbial cells as catalysts.

9. (Previously Presented) The method for producing an acrylamide polymer according to claim 6, wherein the enzymatic method is carried out using microbial cells as catalysts.

10. (Previously Presented) An acrylamide polymer obtained by the method according to claim 6.

11. (Currently Amended) A method for producing an acrylamide polymer, wherein the acrylamide polymer is white in the form of a powder and is colorless in the form of an aqueous solution, comprising:

measuring the content of oxazole and hydrogen cyanide in an acrylonitrile sample;

reducing the concentration of oxazole in the acrylonitrile to 5 mg/kg or less of and reducing the concentration of hydrogen cyanide to 1 mg/kg or less;

enzymatically hydrating acrylonitrile containing oxazole at a concentration of 5 mg/kg or less and hydrogen cyanide at a concentration of 1 mg/kg or less produced by said reducing to yield acrylamide; and

polymerizing monomers containing the acrylamide wherein the temperature for polymerization ranges from 10 to 90°C.

12. (Previously Presented) The method for producing an acrylamide polymer according to claim 11, wherein, during said hydrating, the reaction is carried out until the concentration of acrylamide generated in a reaction solution becomes 30% by mass or more.

13. (Previously Presented) The method for producing an acrylamide polymer according to claim 12, wherein the enzymatic method is carried out using microbial cells as catalysts.

14. (Previously Presented) The method for producing an acrylamide polymer according to claim 11, wherein the enzymatic method is carried out using microbial cells as catalysts.

15. (Previously Presented) An acrylamide polymer obtained by the method according to claim 11.